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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,524	03/23/2004	Jean-Luc Peron	282575US8X	2739

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EXAMINER	
TORRES, JUAN A	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
12/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/806,524

Applicant(s)

PERON, JEAN-LUC

Examiner

Juan A. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213. ●

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-12, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 03/23/04 and 08/02/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 03/23/2004 and 08/02/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The drawings are objected to because:

a) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "1" (see figure 1 and description of figure 1); "341.1" and "341.2" (see figure 4 and description of figure 4); "202.2", "210.2", "212.2", "214.2", "216.2", "218.2", "220.2" and "224.2" (see figure 6 and description of figure 6); "212.3", "214.3", "216.3", "220.3", "218.3", "224.3" (see figure 7 and description of figure 7).

b) The recitation "2K Mode" in figure 5 is improper, because it is not properly constructed (see page 3 lines 29-30); it is suggested to be changed to "2k Mode" (lower case "k").

c) The recitation "8K Mode" in figure 6 is improper, because it is not properly constructed (see page 3 lines 29-30); it is suggested to be changed to "8k Mode" (lower case "k").

d) The recitation "4K Mode" in figure 7 is improper, because it is not properly constructed (see page 3 lines 29-30); it is suggested to be changed to "4k Mode" (lower case "k").

e) Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see ETSI EN 300 744 V1.4.1 (2001-01) IDS NPL document, figure 1 in page 10). See MPEP § 608.02(g).

f) Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see ETSI EN 300 744 V1.4.1 (2001-01) IDS NPL document, figure 7a in page 16). See MPEP § 608.02(g).

e) Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see ETSI EN 300 744 V1.4.1 (2001-01) IDS NPL document, figure 8a in page 19). See MPEP § 608.02(g).

f) Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see ETSI EN 300 744 V1.4.1 (2001-01) IDS NPL document, figure 8b in page 20). See MPEP § 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because:

- a) it is not limited to a single paragraph; and
- b) exceed 150 words in length.

Correction is required. See MPEP § 608.01(b).

35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not

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clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph.

The disclosure is objected to because of the following informalities:

a) The recitation "2K" in page 7 lines 2 and 4; page 9 lines 6, 7 and 9; page 11 line 11; page 12 lines 15, 18 and 25; page 13 lines 1 and 9 is improper, because it is improperly constructed (see page 3 lines 29-30); it is suggested to be changed to "2k" (lower case "k").

b) The recitation "4K" in page 7 lines 9 and 13; page 8 lines 17 and 18; page 14 line 12 is improper, because it is improperly constructed (see page 3 lines 29-30); it is suggested to be changed to "2k" (lower case "k").

c) The recitation "8K" in page 7 lines 2 and 4; page 9 lines 6, 8 and 9; page 11 line 11; page 12 lines 15, 19 and 30; page 13 line 9 is improper, because it is improperly constructed (see page 3 lines 29-30); it is suggested to be changed to "2k" (lower case "k").

d) The recitation "RASM 124" in page 10 line 15 is improper, because it is improperly constructed (see figure 4); it is suggested to be changed to "124.2".

Appropriate correction is required.

Examiner NOTE:

Claim 4 after the preliminary amendment filed by the Applicant's representative on 03/23/2004 read as:

"A transmitter for transmitting data using Orthogonal Frequency Division Multiplexing (OFDM), the transmitter including a data processing apparatus according to claim 1"

Claim Objections

Claims 1-12 and 14-15 are objected to because of the following informalities:

Regarding claim 1, the recitation "signals," in line 8 of claim 1 is improper, because the next element of the apparatus is the last element (see line 11 of claim 13); it is suggested to be changed to "signals, and"

Regarding claims 2-5, they are objected because they depend directly or indirectly from claim 1 and claim 1 is objected.

Regarding claim 6, the recitation "signals," in line 8 of claim 6 is improper, because the next element of the apparatus is the last element (see line 11 of claim 13); it is suggested to be changed to "signals, and"

Regarding claims 7-8, they are objected because they depend directly from claim 6 and claim 6 is objected.

Regarding claim 9, the recitation "signals," in line 10 of claim 9 is improper, because the next element of the apparatus is the last element (see line 11 of claim 13); it is suggested to be changed to "signals, and"

Regarding claim 10, it is objected because they depend directly from claim 9 and claim 9 is objected.

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Regarding claim 11, the recitation "signals," in line 8 of claim 11 is improper, because the next step of the method is the last step (see line 11 of claim 13); it is suggested to be changed to "signals, and"

Regarding claim 12, the recitation "signals," in line 8 of claim 12 is improper, because the next step of the method is the last step (see line 11 of claim 13); it is suggested to be changed to "signals, and"

Regarding claim 14, the recitation "signals," in line 8 of claim 14 is improper, because the next element of the apparatus is the last element (see line 11 of claim 13); it is suggested to be changed to "signals, and"

Regarding claim 15, the recitation "signals," in line 9 of claim 15 is improper, because the next element of the apparatus is the last element (see line 11 of claim 13); it is suggested to be changed to "signals, and"

Appropriate correction is required.

Allowable Subject Matter

Claim 13 is allowed.

Claims 1-12 and 14-15 are allowed if the above objections are overcome.

The following is an examiner's statement of reasons for allowance: claims 1-15 are allowed because a comprehensive search of prior art failed to teach, either alone or in combination, an address generator for use with transmission or reception of data symbols interleaved onto substantially four thousand carriers of an Orthogonal Frequency Division Multiplexed symbol, the address generator being operable to generate a set of addresses, each address being generated for each of the data

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symbols to indicate one of the carrier signals onto which the data symbol is to be mapped or de-mapped, the address generator comprising a linear feedback shift register including a predetermined number of register stages and being operable to generate a pseudo-random bit sequence in accordance with a generator polynomial, a permutation circuit operable to receive the content of the shift register stages and to permute the bits present in the register stages in accordance with a permutation order to form an address of one of the OFDM carriers, and a control unit operable in combination with an address check circuit to re-generate an address when a generated address exceeds the predetermined number of carriers, characterised in that the linear feedback shift register has eleven register stages with a generator polynomial for the linear feedback shift register of $R_i'[10] = R_{i-1}'[0] \oplus R_{i-1}'[2]$, and the permutation order forms an eleven bit address $R_i[n]$ for the i -th data symbol from the bit present in the n -th register stage $R_i'[n]$ in accordance with the table:

$R_i'[n]$ for $n =$	10	9	8	7	6	5	4	3	2	1	0
$R_i[n]$ for $n =$	7	10	5	8	1	2	4	9	0	3	6

, as the applicant has

claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Palin (US 20060062314 A1) discloses that DVB-T system has been evaluated for situations for which it was not originally designed, such as mobile reception, that have different new requirements for the system, the use of the existing DVB-T 8K mode would probably offer wide enough coverage for mobile reception, however, the achieved mobility with the 8K mode might be too slow, i.e. reception might not succeed e.g. in a vehicle driving fast like at the speed of 120 km/h, the 2K mode, on the other hand, would offer sufficient mobility, however, a high density of base stations would be required with the 2K mode because the so called guard interval length is not long enough to support long transmitter distances in that mode, one proposed compromising solution to this problem is to define a new mode: a "4K mode", as to the inner interleaving of the proposed 4K mode, especially to the symbol interleaver, an obvious solution would be to define a new "4K symbol interleaver" which would map 3024 data words (24 groups of 126 data words) onto the 3024 active carriers of one 4K mode OFDM-symbol (it is probable that the number of active carriers would be 3024 in the 4K mode).

b) ETSI (ETSI EN 300 744 V1.5.1 (2004-11)) in the annex F pages 50-60, ETSI November 2004, discloses the present invention.

This application is in condition for allowance except for the following formal matters:

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See above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is 571-272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres
11-13-2007


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER